

CLAIMS:

1. A guide device for use with a spinal fixation element having at least one pair of thru bores formed therein, the guide device comprising:
  - an elongate shaft having a proximal end and a distal end;
  - a guide member coupled to the distal end of the elongate shaft and including first and second pathways extending therethrough in fixed relation to one another; and
  - at least one alignment element positioned distal of the guide member, the at least one alignment element being adapted to interact with a spinal fixation element to position the guide member with respect to the spinal fixation element such that the first and second pathways in the guide member are aligned with a pair of corresponding thru bores formed in the spinal fixation element.
2. The guide device of claim 1, wherein the at least one alignment element comprises at least one tab that extends distally from the guide member.
3. The guide device of claim 2, wherein the at least one alignment element is adapted to rest against an edge of the spinal fixation plate such that the alignment element does not extend into any portion of the spinal fixation plate.
4. The guide device of claim 2, wherein the at least one alignment element is adapted to rest against an edge of the spinal fixation plate and to provide a sliding interference fit with the spinal fixation plate.
5. The guide device of claim 2, wherein the at least one tab comprises opposed first and second tabs that extend distally from the guide member, the first and second tabs being movable between an open position, and a closed position wherein the tabs are adapted to engage opposed edges of a spinal fixation element.
6. The guide device of claim 2, wherein first and second opposed alignment tabs extend from opposed outer edges of the guide member at positions that are substantially between the first and second pathways.

7. The guide device of claim 2, wherein first and second opposed alignment tabs extend from opposed outer edges of opposed ends of the guide member such that the first and second pathways are positioned between the first and second alignment tabs.
8. The guide device of claim 1, wherein the at least one alignment element comprises at least one tab that extends distally from the guide member and that is adapted to interact with an edge of a spinal fixation element, and at least one protrusion that extends distally from the guide member and that is adapted to be disposed within a corresponding bore formed in the spinal fixation element.
9. The guide device of claim 1, wherein the at least one alignment element comprises an alignment tab that extends distally from a distal surface of the guide member and that is adapted to be disposed within a corresponding slot formed in a spinal fixation element.
10. The guide device of claim 1, wherein the at least one alignment element is adapted to prevent rotation between the guide member and a spinal fixation element when the guide member is mated to the spinal fixation element.
11. The guide device of claim 10, wherein the at least one alignment element comprises an oval protrusion that extends distally from a distal end of the guide member.
12. The guide device of claim 1, wherein the guide member has a substantially rectangular, elongate shape and the first and second pathways extend therethrough in a substantially proximal-distal direction.
13. The guide device of claim 12, wherein the guide member includes opposed superior and inferior sides and opposed transverse sides, the transverse sides having a width that is less than a width of the superior and inferior sides.

14. The guide device of claim 13, wherein the at least one alignment element comprises a first alignment tab that extends distally from the superior side of the guide member and a second alignment tab that extends distally from the inferior side of the guide member.
15. The guide device of claim 14, wherein at least one of the tabs is configured to interact with a graft window formed in a spinal fixation element.
16. The guide device of claim 13, wherein the at least one alignment element comprises first and second alignment tabs that extend distally from opposed transverse sides of the guide member.
17. The guide device of claim 1, wherein a distal surface of the guide member has a shape that conforms to the shape of a spinal fixation element.
18. The guide device of claim 1, wherein the first and second pathways are positioned at an angle with respect to one another.
19. The guide device of claim 1, wherein the first and second pathways are defined by opposed, substantially semi-cylindrical sidewalls.
20. The guide device of claim 1, wherein the first and second pathways are at least partially in communication with one another.
21. The guide device of claim 1, further comprising at least one cut-out portion formed in the guide member.
22. The guide device of claim 21, wherein the guide member includes opposed superior and inferior sidewalls and opposed lateral sidewalls extending between the superior and inferior sidewalls, and wherein the at least one cut-out portion is formed in one of the superior and inferior sidewalls.

23. The guide device of claim 22, wherein the at least one cut-out portion extends in a proximal-distal direction at a location that is substantially between the first and second pathways.
24. The guide device of claim 22, wherein guide member includes opposed cut-out portions formed in the superior and inferior sidewalls, and wherein the cut-out portion in the superior sidewall extends between proximal and distal ends of the guide member, and the cut-out portion in the inferior sidewall extends from the distal end of the guide member and terminals distal to the proximal end of the guide member.
25. The guide device of claim 1, wherein the guide member comprises a first barrel having a pathway extending therethrough, and a second barrel having a pathway extending therethrough.
26. The guide device of claim 25, wherein the first and second barrels are positioned at an angle with respect to one another.
27. The guide device of claim 1, wherein the at least one alignment element is formed on a support member that is coupled to the distal end of the elongate shaft, and the at least one alignment element is adapted to removably engage a spinal fixation element.
28. The guide device of claim 27, wherein the guide member is slidably movable along the support member such that a position of the guide member with respect to a spinal fixation element engaged by the support member is adjustable.
29. The guide device of claim 28, further comprising an engagement mechanism formed on a distal end of the elongate shaft and adapted to releasably engage the support member such that the position of the guide member can be temporarily fixed.
30. The guide device of claim 29, further comprising a trigger mechanism formed on the proximal end of the elongate shaft and coupled to the engagement mechanism for moving the engagement mechanism between an engaged position, wherein the guide member is fixed at a

desired position, and a released position, wherein the guide member is slidably movable along the support member.

31. The guide device of claim 27, wherein the support member is arch-shaped and the at least one alignment element comprises first and second substantially concave grooves formed on opposed inner surfaces of the support member.

32. The guide device of claim 1, wherein the at least one alignment element is adapted to loosely interact with a spinal fixation element such that the guide member can pivot with respect to the spinal fixation element.

33. The guide device of claim 1, wherein the first and second pathways have an adjustable length.

34. The guide device of claim 1, wherein the proximal end on the elongate shaft is positioned at an angle with respect to a distal portion of the elongate shaft.

35. A guide device for use with a spinal fixation element having at least one thru bore formed therein, the guide device comprising:

- an elongate shaft having a proximal end and a distal end; and
- a guide member coupled to the distal end of the elongate shaft and including at least one pathway extending therethrough; and
- at least one alignment tab extending distally from the guide member, the alignment element being adapted to providing a sliding interference fit with a spinal fixation element to position the guide member with respect to the spinal fixation element such that the at least one pathway in the guide member is aligned with at least one corresponding thru bore formed in the spinal fixation element.

36. The guide device of claim 35, wherein the guide member includes first and second opposed alignment tabs extending distally therefrom.

37. The guide device of claim 36, wherein the first and second alignment tabs are substantially parallel to one another.
38. The guide device of claim 36, wherein at least one of the first and second alignment tabs is configured to interact with a graft window formed in a spinal fixation element.
39. The guide device of claim 36, wherein the guide member includes first and second pathways extending therethrough, and the first and second opposed alignment tabs extend from opposed outer edges of the guide member at positions that are substantially between the first and second pathways.
40. The guide device of claim 36, wherein the guide member includes first and second pathways extending therethrough, and the first and second opposed alignment tabs extend from opposed outer edges of opposed ends of the guide member such that the first and second pathways are positioned between the first and second alignment tabs.
41. The guide device of claim 35, wherein the guide member comprises at least one barrel having a pathway formed therein.
42. The guide device of claim 41, wherein the barrel has an adjustable trajectory such that the barrel can pivot about a point on a longitudinal axis thereof.
43. The guide device of claim 35, wherein the guide member includes opposed first and second pathways formed therein and at least partially in communication with one another.
44. A spinal fixation kit, comprising:  
a spinal fixation element having at least one thru bore formed therein for receiving a fastening element effective to mate the spinal fixation element to at least one vertebrae, the spinal fixation element having at least one graft window formed therein; and  
a guide member having at least one pathway extending therethrough, and at least one alignment element, at least one of the at least one alignment elements being adapted to interact

with the graft window in the spinal fixation element to align the at least one pathway in the guide member with the at least one thru bore formed in the spinal fixation element.

45. The kit of claim 44, wherein the spinal fixation element includes at least one pair of opposed thru bores formed therein and the guide member includes first and second pathways extending therethrough.

46. The kit of claim 45, wherein the first and second pathways are at least partially in communication with one another.

47. The kit of claim 45, wherein the at least one alignment element comprises first and second alignment tabs that are adapted to align the first and second pathways with one pair of opposed thru bores formed in the spinal fixation element.

48. The kit of claim 47, wherein the first and second alignment tabs are adapted to provide a sliding interference fit with the spinal fixation element.

49. The kit of claim 47, wherein the first and second alignment tabs are substantially parallel to one another.

50. The kit of claim 47, wherein the first and second alignments elements are adapted to be positioned adjacent to opposed edges formed on spinal fixation element, and wherein a distance between the first and second alignment tabs is less than a distance between the opposed edges on the spinal fixation element.

51. The kit of claim 47, wherein the spinal fixation element includes opposed superior and inferior edges and opposed lateral edges, the at least one pair of opposed thru bores being positioned laterally adjacent to one another between the opposed lateral edges.

52. The kit of claim 47, wherein the guide member includes opposed superior and inferior sides and opposed transverse sides, the transverse sides having a width that is less than a width of the superior and inferior sides.

53. The kit of claim 52, wherein the first alignment tab extends distally from the superior side of the guide member and the second alignment tab extends distally from the inferior side of the guide member.

54. The kit of claim 44, wherein the at least one alignment element comprises at least one tab and at least one protrusion.

55. An adjustable guide device for use with a spinal fixation element, comprising:  
an elongate shaft having a proximal end and a distal end that is slidably coupled to a support member, the support member being adapted to rigidly engage a spinal fixation element;  
and

a guide member coupled to a distal portion of the elongate shaft and including at least one pathway extending therethrough that is adapted to be aligned with a corresponding thru bore in a spinal fixation element when the support member is engaged to a spinal fixation element.

56. The adjustable guide device of claim 55, wherein the support member comprises an arch-shaped support member.

57. The adjustable guide device of claim 56, wherein the distal end of the elongate shaft is slidably mated to the arch-shaped support member.

58. The adjustable guide device of claim 57, further comprising an engagement mechanism formed on the distal end of the elongate shaft and adapted to releasably engage the support member such that the angle of the guide member can be temporarily fixed.

59. The adjustable guide device of claim 58, further comprising a trigger mechanism formed on the proximal end of the elongate shaft and coupled to the engagement mechanism for moving



the engagement mechanism between an engaged position, wherein the guide member is fixed at a desired position along the support member, and a released position, wherein the guide member is slidably movable along the support member.

60. The adjustable guide device of claim 55, wherein first and second opposed ends of the support member include a substantially concave groove formed on an inner surface thereof and adapted to seat and removably engage opposed edges of a spinal fixation element.

61. A spinal fixation kit, comprising:

a spinal fixation element having a plurality of longitudinally spaced thru bore regions formed therein, each thru bore region containing a pair of laterally spaced thru bores positioned between opposed, transversely extending guide contact surfaces; and

a guide member having a pair of guide pathways formed therethrough, and opposed alignment elements formed thereon in fixed relation to one another such that the opposed alignment elements can interact with opposed guide contact surfaces in any one of the plurality of thru bore regions to align the pair of guide pathways in the guide member with a pair of thru bores in the spinal fixation element.

62. The kit of claim 61, wherein a distance between opposed guide contact surfaces is the same in each thru bore region of the spinal fixation element.

63. The kit of claim 61, wherein the spinal fixation element includes at least one graft window formed therein and positioned between two pairs of thru bores.

64. The kit of claim 63, wherein at least one of the opposed guide contact surfaces in each thru bore region is a transversely extending edge of the graft window.

65. A guide device for use with a spinal fixation element having at least one thru bore formed therein, the guide device comprising:

an elongate shaft having proximal and distal ends; and

a guide member coupled to the distal end of the elongate shaft, the guide member being

in the form of a substantially hollow housing having first and second pathways extending therethrough between proximal and distal ends thereof, the first and second pathways being at least partially in communication with one another.

66. The device of claim 65, wherein the first and second pathways comprise opposed, substantially semi-cylindrical pathways formed within the hollow housing.

67. The device of claim 65, wherein at least a portion of each pathway is defined by a substantially elongate, semi-cylindrical sidewall of the housing.

68. The device of claim 67, wherein a distal end of each semi-cylindrical sidewall extends distally beyond a distal end of the guide member to form opposed tabs that are adapted to seat a spinal fixation element therebetween.

69. The device of claim 68, wherein each tab has a substantially concave inner surface that is adapted to match the contour of a substantially concave outer surface formed around a perimeter of a spinal fixation element.

70. The device of claim 65, further comprising at least one cut-out portion formed in the housing between the first and second pathways.

71. The device of claim 70, wherein the housing includes opposed first and second cut-out portions extending in a proximal-distal direction, and formed substantially between the first and second pathways.

72. The device of claim 71, wherein the first cut-out portion extends from the distal end of the housing to the proximal end of the housing, and wherein the second cut-out portion extends from the distal end of the housing and terminates distal to the proximal end of the housing.

73. A guide device for use with a spinal fixation element, the guide device comprising:  
an elongate shaft having proximal and distal ends; and

a guide member coupled to the distal end of the elongate shaft and adapted to be juxtaposition on a spinal fixation element having first and second thru bores formed therein, the guide member including a first substantially C-shaped lateral sidewall for guiding implants, tools, and devices through the first thru bore in the spinal fixation element, and a second, opposed substantially C-shaped lateral sidewall for guiding implants, tools, and devices through the second thru bore in the spinal fixation element.